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FOREST INSECT SURVEY - SEASON OF 1946
ELDORADO NATIONAL FOREST, CALIFORNIA

by

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ELDORADO NATIONAL FOREST, CALIFORNIA

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The forest insect survey for 1946 was primarily a reconnaissance job to locate the hotspots of barkbeetle infestation on the Eldorado National Forest and adjacent timber lands under protection of the State Division of Forestry. Two small plots and 90 miles of road strip were used to obtain quantitative information on sample areas.

I - GENERAL CONDITIONS DURING THE 1946 SEASON

The same infestation trends that were found in 1945 continue to dominate the over-all situation on the Eldorado in 1946. These are characterized by:

1. Very low endemic barkbeetle infestations in the virgin pine areas, especially above the 4,500 foot elevation range.

2. Where recent logging operations and fires have disturbed conditions Ips-western pine beetle infestations show considerable activity. This is especially noticeable in the lower ponderosa pine belt, where during the past two years some local areas have developed losses approaching epidemic conditions.

3. Mountain pine beetle infestations in lodgepole pine are on the increase in local areas but have not as yet developed into serious epidemic proportions.

4. There is some increase of fir engraver beetles in white fir.

Developments in and around logging areas

The outstanding feature of barkbeetle infestations on the Eldorado is the concentrations which have developed on and around logging areas during the past two seasons. Reserve stands nearby and reserve trees on the logged areas and along the access roads over which logs are hauled, have been attacked singly and in groups during the 1946 season. The most conspicuous losses have been caused by the 1946 summer generation, but a number of winter brood trees were noted; only a few of which had faded at the time the survey was made.

The cutting of second growth stands by numerous small sawmills seems to have produced the most favorable conditions for this type of infestation. Unlopped slash, cull logs and standing trees injured by logging, make up the material which first attracts beetles to the area. As these concentrations of beetles build up on the recently logged lands, vigorous uninjured reserve

trees are stacked and killed. Where logging was carried on during the spring and summer the volume of infestation apparently reaches its peak during the latter part of the season. On the Whaler Creek tract logged by the Michigan-California Lumber Company during spring and early summer of 1946, a 40 acre plot in the reserve stand showed a loss for this year of 82 board feet per acre. In the Georgetown district a similiar plot in an uncut 70 year old stand of second growth near recent logging operations, showed a loss for 1946 of 70 board feet per acre.

Just how long these active infestations will persist on and near recent cutover lands is a matter of conjecture. Past observations indicate that they will soon subside unless climatic conditions favor a general epidemic increase. On this survey it was noted that on some areas logged in 1944 and 1945, the post-logging infestations had subsided by 1946, but at the same time it was found that new concentrations had developed on and around the more recent 1946 cuttings.

Recent burns

Infestations which can be attributed to fires were found mainly outside of the National Forest boundaries. Last year considerable infestation was noted in the Weber Creek burn which occurred in 1944. The 1946 infestation in and around this burn shows an increase. This may be due in part to logging operations which have been conducted in and around the burn during the 1946 season.

A burn which occurred just south of the Placerville-Camino highway in 1945 developed small concentrations of western pine beetle attack in fire-injured trees during the summer of 1946. An examination, however, indicated that broods in these trees had failed to develop successfully and that the infestation will soon subside.

Special use and recreational areas

The American River canyon, where control work was carried on in 1944 and 1945 has shown very little active infestations in 1946. The current seasonal losses are the lowest that have occurred for a number of years.

In the Lake Valley areas losses in Jeffrey pine and sugar pine are very low. On the other hand mountain pine beetle infestations have increased in lodgepole pine.

II - RESULTS OF 1946 CONTROL WORK

Slate Mountain project

During the late winter and spring season of 1946, a total of 231 trees with a volume of 200,000 board feet were treated by the cut-peel-burn method. The survey made this fall shows that for the project area as a whole there has been a substantial reduction in losses from 1945. No infestation of any consequence was found on the 1945 cutover lands of the Michigan-California Lumber Company, which were an important phase of the control job. In the virgin stands the annual loss for 1946 is about 50 percent below that of 1945. The greater part of the 1946 barkbeetle infestation is found in new concentrations on the 1946 cutover which was logged after control work was completed; and on the poor sites south of Slate Mountain where the trees

are suffering from poor growing conditions and incipient attacks by pine flatheads.

III - PROPOSED CONTROL WORK FOR 1947

In virgin pine stands

No infestations in commercial timber stands were brought to light this year which will warrant direct control action. This applies to the Slate Mountain area where most of the current loss can be attributed to poor site conditions and to some overflow of beetle populations from post-logging infestations. Under these conditions salvage of the infested and high risk trees is desirable and is the method best suited to the entomological factors that are involved. Salvage control is recommended for the Slate Mountain area wherever the infested trees can be reached by logging operations.

Second growth stands

Current heavy post-logging infestations in second growth stands in and around recent logging operations raises the question of whether or not to apply control. Administrative, economic, and entomological factors must be considered.

In the first place the owners of the timber have to decide whether they wish to give it protection. In many cases residual stands are of so little value that the owner has no interest in saving it, he may infact wish to have all of it destroyed so as to make the land available for agricultural crops.

But if the owner, or owners, of a block of second growth timber do wish to protect it from insects and fire then economic factors must next be considered. Is the timber to be saved worth the cost of protection? Direct insect control is expensive, so the present and future timber values must be such as to warrant this expenditure. Rarely is such cost justified in low value timber on poor sites, where unfortunately insect losses are frequently heaviest.

Equally important is a consideration of entomological factors. Will control work bring about a reduction in loss and what will happen if no control work is applied? Experience has shown that direct control against Dendroctonus brevicomis losses will result in at least 50 percent reduction in loss. On the other hand post-logging infestations are characteristically unstable and usually subside after two or three years even without applied control. In other cases heavy losses have been sustained for longer periods. There is no known method at present of predicting trends. The safest policy is to apply control, provided protection is desired and the young timber crop is valuable enough to justify the protection costs. Such a decision first rests with the timber owner.

Lake Valley area

Direct control work is recommended for mountain pine beetle infestations in lodgepole pine and western white pine where they threaten values in summer home tracts. These infestations are small and do not involve serious epidemic conditions, but control action is in keeping with the policy of maintenance

control for intensively used recreational areas.

The most important situation involves the Echo Lakes special use area. In the fall of 1945 a group attack by the mountain pine beetle was located at Echo Chalet and 5 infested trees were treated with contributed labor by the Forest Service. Early in July, 2 more infested trees were found which were also treated. Still 2 more trees were found on the same site during the survey in early October of this year. The eradication work had been done quite carefully so it is fairly evident that the beetles are coming in to this center from some source outside of the Echo Lake area. The area is within flight range of an aggressive group killing of lodgepole pine at Osgood Swamp, about a mile in air line distance, which has been going on for several years. The number of 1946 attacks in the Osgood Swamp group is estimated at 80 trees. Their treatment is recommended in order to protect the Echo Lakes area from further invasion. Because of the dense stand on the site, treatment of the infested bark with oil, or a DDT-oil formula, is preferable to burning. The work should be completed before the end of June, 1947. An allotment of $150.00 supplemented by contributed labor will be needed for this control job.

SUPPLEMENT

Conditions by working circles

In the forest insect reports for 1944 and 1945 annual losses in the commercial pine type were discussed by working circles. This break-down will be continued in the 1946 report because entomological infestation units have not yet been set up the Eldorado.

1 - Long Canyon block - Auburn working circle

Estimated rate of pine loss	Trees per section	Volume per acre
1945	4	15
1946	4	15

This unit was not examined in the 1946 survey. C. E. Dunston, who made a reconnaissance of the area in October with representatives of the office of Blister Rust Control, reported seeing no infestation of any consequence. It is evident that the same endemic conditions found in 1945 still prevail.

2 - Georgetown

Estimated rate of pine loss	Trees per section	Volume per acre
1945	12	20
1946	8	10

The above estimates apply only to the virgin stands where losses are somewhat less than in 1945 and were not disturbed by recent cutting. However around recent logging operations in the western part of the district conditions are quite different. Western pine beetle populations have concentrated in slash, and in standing trees on the cut over and in standing trees on bordering areas. Where these conditions exist the 1946 losses are 6 to 8 times greater than in the virgin stands. Losses were estimated from

the following samples:

Sample Area	1945		1946	
	Trees per Sec.	Vol per acre	Trees per Sec.	Vol per acre
A. Count from Slate Mt. lookout. (virgin)	12	20	8	10
B. Tunnel Hill. Road strip 112 acres. (virgin near late cutting)	24	30	56	60
C. Pino Grande. Road strip (cut over and virgin)	18	30	36	40
D. Slate Mtn. Sample plot of 40 acres. 1946 cut over	32	32	128	82
E. Bottle Hill. Sample plot of 40 acres. 70-year old second growth. Uncut.	64	8	192	70

3 - Silver Creek working circle

Estimated rate of pine loss	Trees per section	Volume per acre
1945	3	18
1946	4	15

The estimates apply only to virgin stands in the eastern part of the area. Along the western boundary loss estimates have been grouped with those in the Georgetown district.

Conditions were discussed with District Ranger Morris and no sample plots or road strips were run. Morris reports that infestation in the ponderosa pine and sugar pine type appears to be less than in 1945.

4 - Big Bend working circle

Estimated rate of pine loss	Trees per section	Volume per acre
1945	15	20
1946	7	10

Ranger Morris reports the 1946 infestation to be the lowest for several years.

5 - Alder Creek working circle

Estimated rate of pine loss	Trees per section	Volume per acre
1945	(no estimate)	
1946	5	10

Current infestation was reported by Bert Parsons as very light with no losses of consequences.

6 - Caldor working circle

Estimated rate of pine loss	Trees per section	Volume per acre
1945	5	15
1946	7	18

The 1946 estimate, based on a reconnaissance through the unit and a 5.7 mile road count in the Steeley Creek basin, mostly in cut-over of 1941 and 1942. Loss is characterized by a 1946 summer kill of large thrifty ponderosa pines, which occur singly and are widely scattered. Some of these trees have been recently scarred by lightning. In addition some killing of pole stands in groups was found along recent road clearings. A number of group attacks, apparently resulting from logging road clearings were seen along Plummer ridge between Caldor and Oat Creek.

7 - Clear Creek working circle

Estimated rate of pine loss	Trees per section	Volume per acre
1945	30	35
1946	7	10

In the 1945 survey summer brood trees occurring both singly and in groups were conspicuous in the south fork of Consumnes River and in second growths stands west of the Forest boundary. This situation seems to have cleared up during 1946 as summer brood trees were at least 75 percent less in number than in 1945.

8 - Amador working circle

Estimated rate of pine loss	Trees per section	Volume per acre
1945	7	15
1946	7	15

The 1945 survey showed endemic conditions throughout the greater part of the unit except along the western Forest boundary, where a road strip along Deakes Ridge showed a loss of 30 trees per section and 45 board feet per acre. This was largely post-logging infestation which extended well into the area west of the Forest boundary. In the 1946 survey little change was found in the endemic areas and the concentration of beetles along the west Forest boundary had subsided. The advance of heavy logging operations to the east had cleared off the Deakes Ridge road strip. Post-logging infestations in the cut-over are now relatively light compared with 1945.

Conditions In Recreational Areas

Meeks Bay and Emerald Bay units:

No change from the endemic conditions found in 1945 was noted. Last year attention was called to the mountain pine beetle in sugar pine on poor sites in and around the Bliss State Park and control work was suggested. This infestation has not increased since 1945 but the adverse site conditions favorable to continued loss of trees are still operative. Although control work is not urgent at present an annual maintenance program is desirable for these areas.

Lake Valley and Echo Lakes unit:

There has been a slight increase in Jeffrey pine losses during 1946 but the general average is well under 10 trees per section. Conditions which should be given attention are the increasing groups of mountain pine beetle attacks in lodgepole pine. One large group at Osgood Swamp is apparently the source for beetles invading the Echo Lakes area and its eradication is recommended.

Phillips and Strawberry units:

Very low endemic infestations in Jeffrey pine, sugar pine, white fir, and lodgepole pine still persist in these areas and no control action is necessary.

2 copies to F.C.C.
1 Supervisor - Eldorado
1 Regional Forester
1 State Forester

1 file